

RED OAK CREEK BRIDGE

(Imlac Bridge

Big Red Oak Creek Bridge)

National Covered Bridges Recording Project

Spanning (Big) Red Oak Creek, Huel Brown Road (Covered Bridge Road)

Woodbury vicinity

Meriwether County

Georgia

HAER No. GA-138

PHOTOGRAPHS

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service

U.S. Department of the Interior

1849 C St. NW

Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

RED OAK CREEK BRIDGE (Imlac Bridge) (Big Red Oak Creek Bridge) HAER No. GA-138

LOCATION: Spanning (Big) Red Oak Creek at Huel Brown Road (Covered Bridge Road), Woodbury vicinity, Meriwether County, Georgia
UTM: 16.728578.3658237, Gay, Georgia Quadrangle

STRUCTURAL
TYPE: Wood covered bridge, Town lattice truss

DATE OF
CONSTRUCTION: Reportedly 1840s, more likely late nineteenth century

DESIGNER/
BUILDER: Unknown, commonly attributed to Horace King

PRESENT OWNER: Meriwether County, Georgia

PREVIOUS USE: Vehicular bridge

PRESENT USE: Vehicular bridge

SIGNIFICANCE: The Red Oak Creek Bridge is one of sixteen surviving covered bridges in Georgia and may have been built by prominent bridge builder Horace King, or one of his sons. The bridge is notable for its long approach span, which is typical of southern bridge construction.

HISTORIAN: Researched and written by Lola Bennett, March 2003

PROJECT
INFORMATION: The National Covered Bridges Recording Project is part of the Historic American Engineering Record (HAER), a long-range program to document historically significant engineering and industrial works in the United States. HAER is administered by the Historic American Buildings Survey/ Historic American Engineering Record, a division of the National Park Service, U.S. Department of the Interior. The Federal Highway Administration funded the project.

For related documentation, see HAER No. GA-140, Watson Mill Bridge.

Chronology

- 1807 Horace King born to Edmund and Susan King, slaves of Edward King, at Cheraw, South Carolina
- 1820 Ithiel Town (1784-1844) patents the Town lattice truss
- 1824 Ithiel Town supervises construction of PeeDee River Bridge at Cheraw, South Carolina
- 1828 PeeDee River Bridge is rebuilt after being washed away in 1826¹
- 1830 Edward King dies; John Godwin (1798-1859) purchases Horace King, his mother and siblings
- 1832 John Godwin and Horace King build Chattahoochee River Bridge at Columbus, Georgia
- 1839 Horace King marries Frances L. Thomas (1825-1864)
- 1842 Horace King superintends construction of the Columbus Bridge at Columbus, Mississippi
- 1843 Birth of Horace King's first son, Washington W. King
- 1846 Horace King freed by the Alabama State Legislature
- 1847 Road and crossing appear on William Bonner's map of Georgia
- 1849 Horace King repairs the Alabama State Capitol after it burns
- 1859 John Godwin dies; Horace King erects a monument on his grave at Phenix City
- 1864 Horace King's wife, Frances, dies
- 1869 Horace King elected to Alabama State Legislature
- 1873 King family moves to LaGrange, Georgia
- 1875 Washington W. King moves to Atlanta
- 1879 Marshall King dies

¹ Rev. Francis Cherry's 1885 *History of Opelika* states that the first bridge Horace King worked on spanned the Pee Dee River in South Carolina. From this information, some modern writers have concluded that Horace King and John Godwin learned covered bridge building directly from architect Ithiel Town. According to Lupold and French, detailed records of the PeeDee River Bridge contain no evidence that either King or Godwin worked on the bridge, but they *may* have worked on its replacement in 1828 and in this capacity become acquainted.

- 1885 Horace King dies at LaGrange, Georgia
- 1885 Washington W. King builds Watson Mill Bridge, near Comer, Georgia
- 1888 City of LaGrange names King Street in honor Horace King and his son Marshal
- 1899 George King dies
- 1910 Washington King dies
- 1913 Ernest King becomes the third generation of his family to work on the Fort Gaines Bridge
- 1926 John T. King dies
- 1973 Big Red Oak Creek Bridge listed on the National Register of Historic Places
- 1975 Big Red Oak Creek Bridge inventoried by the Historic American Engineering Record
- 1978 Horace King's gravesite discovered and marked by Ocfuskee Historical Society
- 1979 Horace King inducted into the Alabama Engineering Hall of Fame
- 1999 Red Oak Creek Bridge rehabilitated at a cost of \$176,253
- 2003 Red Oak Creek Bridge recorded by the Historic American Engineering Record

Description

The Red Oak Creek Bridge is a single span Town lattice truss covered bridge on concrete piers. It has a 290' long timber trestle approach span on the north end and a short approach span on the south end.² The main (covered) span is 116' long with a clear span of 95'. The truss is 13'-6" high from the top of the upper chord to the bottom of the lower chord, 16'-6" wide overall, with a roadway width of 16'-6."

The trusses are framed in the manner patented by Ithiel Town in 1820 and modified in 1835. The upper and lower chords are composed of two pairs of 2½"x10" planks sandwiching the truss. The chords sandwich a lattice web, 2½ diamonds high, composed of 2½"x10" planks crossed over each other and fastened at each intersection with two 2" diameter treenails. Two treenails at each lattice intersection also fasten the chords together. There is a secondary lower chord composed of 2½" x 10" planks at the level of the deck. There are vertical posts at the end of the trusses and 6"x8" diagonal chin braces between each pier and the upper chord. Each chin brace sits in a metal bracket on the top of the pier and passes through a hole in the deck to the upper chord, where it is notched and bolted in place. Metal pipe guardrails curve around the base of each chin brace.

The upper lateral system consists of 6"x10" tie beams on top of the upper chord, spaced three diamonds apart. There is 4"x4" diagonal lateral cross bracing between the tie beams and 4"x4" sway braces between the lattice web and tie beams. Rafters, measuring approximately 2"x6", frame onto the upper chord at each tie beam. The rafters support a series of 1"x4" longitudinal purlins, spaced 1' apart, to which a wood shingle roof is fastened.

The lower chords of the bridge rest on short 14"x16" bolster beams at the piers. The rest of the floor system appears relatively new. Transverse floor beams measuring 4"x16" are notched and seated on the lower chord at every other lattice intersection. There are seven lines of 3"x6" stringers on top of the floor beams and 3x6" lateral cross bracing between the floor beams. The deck, composed of 3"x9" planks, is laid transversely on top of the stringers. There are longitudinal running boards, composed of five lines of 2"x8" planks, on top of the deck.

Concrete piers support the main span of the bridge. There is a short 12' trestle on timber bents at the south end of the bridges, and a long trestle on 16" diameter metal tubular piers, eighteen rows, three abreast, at the north end of the bridge.

Board and batten siding covers the exterior of the bridge to the eaves. The sheathing is fastened to the outer faces of the chords and a 2"x5" longitudinal nailer about halfway up the lattice web. The portals have squared openings and angle about 5' forward over the approaches. The bridge's metal roof was replaced in 1999. There are timber railings along the approaches, which were rebuilt in 1981.

² Long approach spans, necessitated by the region's wide floodplains, are typical of southern bridge construction.

Georgia Covered Bridges

John Godwin and Horace King built Georgia's first known covered bridge in 1832 over the Chattahoochee River at Columbus. It was a Town lattice truss, a type that was used for many of the estimated 250 covered bridges built in Georgia during the nineteenth century.³ Presumably, many covered bridges did not survive the Civil War, and many others were lost to floods, vandalism, neglect and replacement. In 1955, the Georgia State Highway Department inventoried the state's remaining covered bridges and came up with a list of seventy-seven.⁴ Still, the losses continued, and by 1971 there were only twenty-three remaining.⁵ Today, Georgia has sixteen covered bridges.⁶

History of Bridge and Site

The Red Oak Creek Bridge was reportedly built in the 1840s, but no written records have been found to confirm that date, or to provide information on the road or crossing, which appear on William G. Bonner's 1847 "Map of the State of Georgia."⁷ Physical evidence, including the overall condition of the bridge, suggests that the bridge may have a somewhat later construction date, in which case, it may have been built to replace an earlier structure at this site.

The bridge has been attributed to renowned bridge builder Horace King.⁸ King and his sons built more than a hundred covered bridges of this size in the South. They lived in the nearby community of LaGrange after 1873. This is one of two covered bridges in Meriwether County, the other being the White Oak Creek Bridge (1880) and also attributed to Horace King.

The Red Oak Creek Bridge still carries vehicular traffic. The Georgia State Department of Transportation rehabilitated this and eight other covered bridges in 1998-99.

Ithiel Town and the Town Lattice Truss

Ithiel Town was born in Thompson, Connecticut in 1784 and died in New Haven in 1844. As a young man, he learned carpentry and studied architecture at Asher Benjamin's school in Boston. From 1829 to 1835, Town was a partner in the New York City firm of Town & Davis. For most of his life, Town practiced architecture and designed a number of noteworthy buildings, including Christ Church in Hartford (1825), the New York City Custom House (1837), the North Carolina State Capitol in Raleigh (1841), the Yale College Library (1842), and the Virginia State

³ John S. Lupold, Thomas French Jr. and Thomas L. French, *Bridging Deep South Rivers: the Life and Legend of Horace King* (Columbus: University of Georgia Press, 2004), p.35.

⁴ State Highway Department of Georgia, "Covered Bridges in Georgia," May 20, 1955.

⁵ "Georgia's Kissing Bridges," *The Sunday Ledger-Enquirer* (Columbus, Georgia), November 14, 1971.

⁶ Fourteen of these have reported construction dates ranging from c.1840 to 1906; the remaining two were built in 1975 and 1995.

⁷ A 1980 courthouse fire reportedly destroyed all pre-1885 county records.

⁸ Lupold and French indicate that some structures attributed to Horace King were later found to be constructed by one of his sons.

Capitol at Richmond (1842). Although he is primarily recognized as an architect, Town also made a significant contribution to the field of engineering when, in 1820, he was granted a patent for a lattice truss bridge. In 1820, Eli Whitney wrote to Town regarding this innovative design:

It appears to me to be much lighter, in proportion to its strength, than any other wooden bridge which I have seen; a consideration of much importance, both as respects expense, and the greater ease with which it supports its own weight. ...On the whole, its simplicity, lightness, strength, cheapness and durability, are, in my opinion, such as to render it highly worthy of attention.⁹

Town's truss had parallel chords connected by a lattice web of overlapping planks pinned together at opposing angles. By eliminating complex joinery and using common sawn planks instead of hewn timbers, Town anticipated this method of bridge construction to be "the most simple, permanent, and economical, both in erecting and repairing."¹⁰ Unlike panel trusses, the lattice truss functioned as an integral unit, much like a series of overlapping triangles. A load applied to one part of the structure was transferred to other parts of the structure via the pins at each lattice intersection.¹¹

Town received a second patent in 1835, adding a second lattice web, which was used primarily for railroad bridges. Town built only a few bridges himself, but aggressively promoted his truss design through agents who sold the rights to use his patent at \$1 per foot of bridge. It is said that Town actually derived more income from his engineering work than from his architectural practice.¹² The Town truss' popularity was based on the a number of factors: it used small, reasonably sized lumber; it required a minimal amount of intricate framing, allowing it to be easily erected by local unskilled labor; it could span up to 200'; and it showed stress long before collapse would occur.¹³ Thousands of Town lattice trusses were built in the United States in the nineteenth century, and the Town lattice system continued to be used well into the twentieth century. There are about 150 surviving Town lattice truss covered bridge in the United States. While the majority are located in the Northeast, ten of Georgia's surviving covered bridges are of Town lattice construction.¹⁴

Horace King

Horace King (1807-1887) built Georgia's first covered bridge in 1832 and continued building covered bridges throughout his life. He had an extraordinarily long and prolific career as an

⁹ Eli Whitney, letter to Ithiel Town, December 26, 1820, Ithiel Town Papers, Yale University Library, New Haven, Connecticut.

¹⁰ Ithiel Town, "A Description of Ithiel Town's Improvement in the Construction of Wood and Iron Bridges: Intended as a General System of Bridge-Building" (New Haven: S. Converse, 1821), p.4.

¹¹ Richard Sanders Allen, *Covered Bridges of the Northeast* (Brattleboro: Stephen Greene Press, 1957), p.15.

¹² Henry F. Withey and Elsie Rathburn Withey, "Ithiel Town," biographical sketch in *Biographical Dictionary of American Architects (Deceased)* (Detroit: Omnigraphics, 1970), p.604.

¹³ Brenda Krekeler, *Covered Bridges Today* (Canton, Ohio: Daring Books, 1988), p. 19.

¹⁴ The Town lattice's popularity in Georgia may very well have resulted from Ithiel Town's personal involvement with a number of high-profile architectural and bridge building projects in adjoining states.

American bridge builder, and his sons and grandson carried on his legacy into the twentieth century. While the true extent of the King family's work remains unknown, historians estimate that they collectively built over 100 covered bridges and dozens of important buildings in South Carolina, Alabama, Georgia and Mississippi.¹⁵ Horace King's story is all the more remarkable because, although he was born in slavery, his work ethic and bridge building skills garnered the respect of prominent members of Southern society and enabled him to gain his freedom in 1846. Although he never attended school, Horace King drew up contracts and plans for bridges, supervised work crews, and actively sought to expand his level of craftsmanship and engineering expertise throughout his life.¹⁶

Because of his skill in building bridges, Horace King became a legend in his own time. In recent decades, the events of his life have captured the public imagination, with the result that many of Horace King's accomplishments have been exaggerated in contemporary accounts, claiming, for example, that he built "most of the homes and bridges" in Alabama and Georgia, or that he invented the King truss. In addition, Horace King has been credited, at one time or another, with the construction of nearly every surviving covered bridge in the South. Some of these bridges were later determined to have been built by his sons, but the attribution of many, like Red Oak Creek Bridge, is often only supported by oral tradition, so the builder's true identity may never be known. Yet, while few, if any, of his bridges survive, and many aspects of his life have been shrouded in myth, Horace King remains a prominent figure in the history of covered bridge building, and his personal story continues to inspire Americans from all walks of life.

¹⁵ Lupold, French, and French, p.102-122.

¹⁶ In the late 1860s, King invented a saw with replaceable teeth and ran the first sawmill using this invention. Alabama Senator and entrepreneur Robert Jemison Jr. (1802-1871) noted in correspondence that King was using both the Town lattice truss and the Howe truss for bridges, an indication of his versatility as a builder.

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